

Aircraft Carriers – Enduring and Transformational



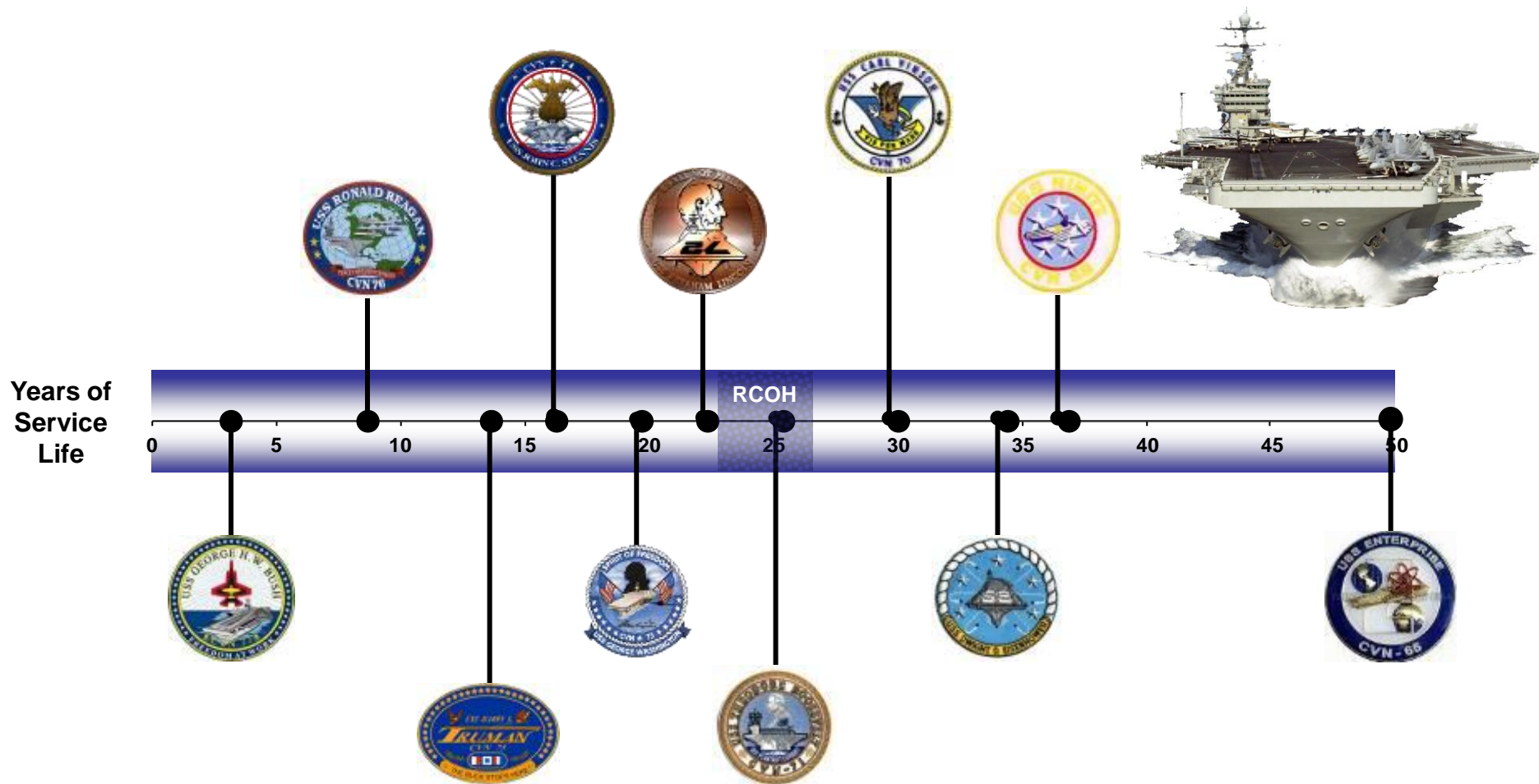
RDML Tom Moore
PEO Aircraft Carriers





Carriers – Enduring and Transformational

- ENTERPRISE will be 51 at her FY13 inactivation
- NIMITZ-Class: 500 carrier-years, serving over 84 years, from 1975 until 2059
- Only 42% through the service life of the NIMITZ Class – 290 carrier-years remaining





Evolution of NIMITZ Class Aircraft



1975

- F-4J
- A-6E
- A-7E
- SH-3
- RA-5
- E-2B
- EA-6B



Today

- F/A-18E/F
- F/A-18 A/F
- MH-60R/S
- E-2C
- EA-6B



Tomorrow

- F-35C
- F/A-18E/F
- EA-18G
- E-2D
- MH-60R/S
- UCLASS Unmanned Carrier-Launched Airborne Surveillance and Strike System

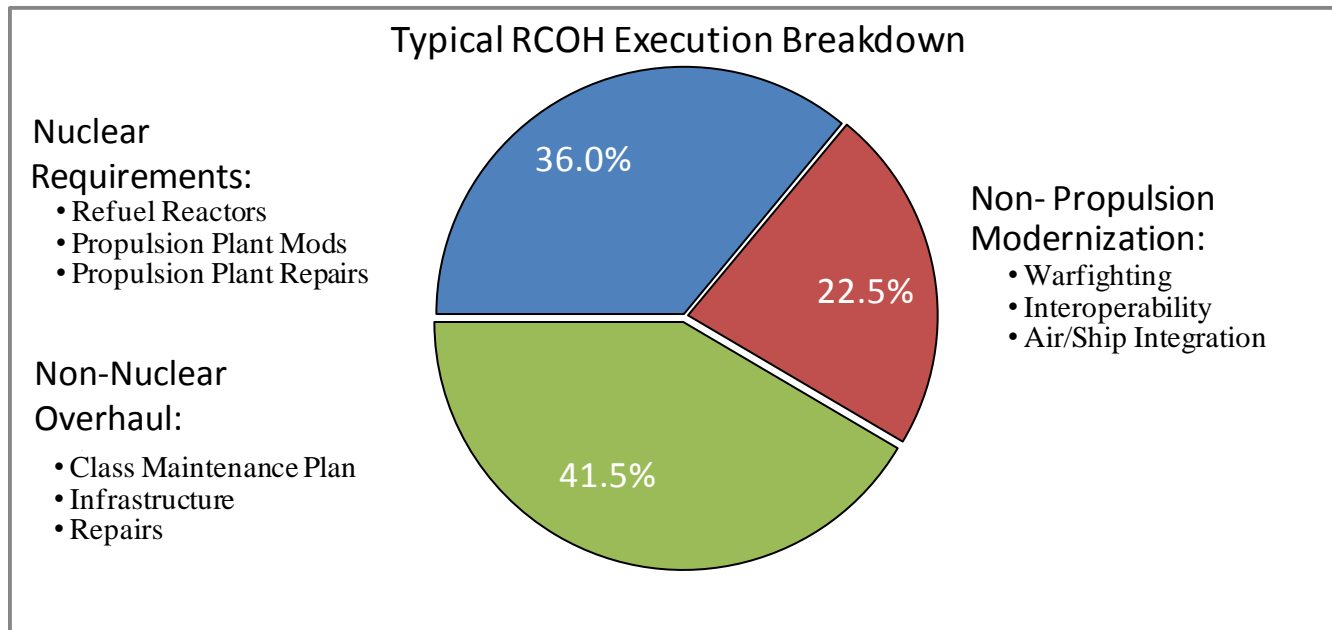


Refueling Complex Overhaul Program (RCOH)

Mid-life recapitalization depot availability to accomplish...

- Refueling of the ship's reactors
- Warfighting modernization
- Repairs of ship systems and infrastructure

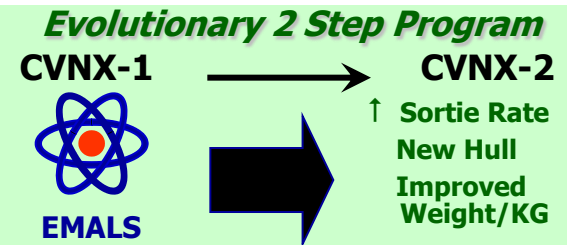
...so the aircraft carrier may adapt to future mission requirements and meet continued service life requirements





Ford Class Program History

- Milestone 0 Approval March 96
- Defense Acquisition Board Oct 98 authorized:
 - Large Deck (75 Aircraft)
 - New Nuclear Propulsion and Electric Plant Design
 - Evolutionary Acquisition Strategy (CVNX-1→ CVNX-2)
- Milestone I Approval 15 Jun 00
- CVNX-1 Construction Contract Award FY06 – Delivery FY13



OSD/NAVY Review

- Program Decision Memorandum signed 12 Dec 02
 - Pull Forward Technologies Intended for CVNX-2 into the first ship
 - Designates Program as CVN 21
- Revised Acquisition Strategy
- Milestone 'B' – April 04
- Construction Preparation Contract Awarded – 3rd Quarter FY04
- Lead Ship Construction Contract Award FY07 – Delivery FY14

Changed the Program



2006 Defense Budget

- Final 2006 Defense Budget Delays CVN 78 and CVN 79 one year
 - Expands Construction Preparation Contract to include 2007
 - Lead Ship Construction Contract Award FY08 – Delivery FY15

Changed the Program

FY07 NDAA

- FY07 National Defense Authorization Act Authorizes the Navy to Enter into Construction Contracts for First Three Ships of CVN 78 Class
 - Authorizes Four-Year Funding for First Three Ships of CVN 78 Class

Contract Authorization

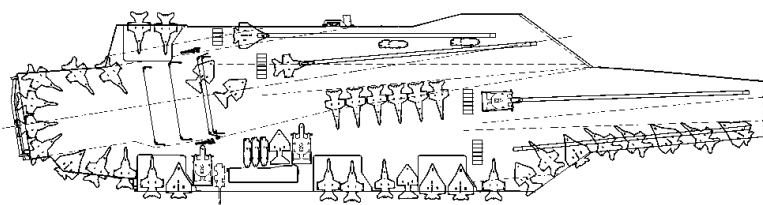
FY08 DAB PR

- OSD (AT&L) Acquisition Decision Memorandum of 6 Aug 2008 authorizes CVN 78 to enter the production phase
 - Detail Design and Construction Contract awarded 10 Sep 2008

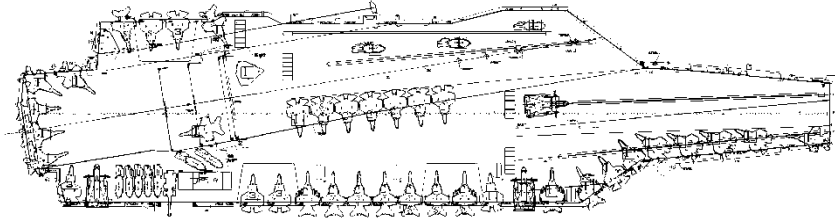
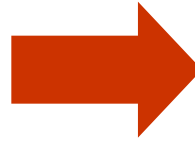
DD&C Contract Award

GERALD R. FORD (CVN 78) Replaces USS ENTERPRISE (CVN 65)

Why the Ford Class?



NIMITZ-Class



CVN 78-Class

Focused Investment

Increased Flexibility

- Greater operational availability
- 3X electric plant capacity
- Flexibility of open architecture
- Restoration of Service Life Allowances (Wt/Kg)
- Integration of future air platforms

Increased Capability

- **Sortie Generation Rates increased by 25%**
- Survivability improvements
- Damage Control improvements
- Improved ship self-defense
- Increased magazine and AVGAS storage
- Interoperability (IER)

Increased Affordability

- **\$5 B TOC reduction**
- **500-900 billet reduction**
- Reduced construction costs
- Maintenance requirements reduced by 30%
- Product Model Design

NIMITZ Is a 40 Year-old Design That Constrains the Ability to Transform



NIMITZ Class to Ford Class

	NIMITZ Class (CVN 77)	Ford Class (CVN 78)
Catapults	4 x Steam	4 x EMALS
Arresting Gear & Barricade	4 x MK7-4	3 x Adv Arresting Gear
Aircraft Elevators	4 x 200,000 lbs Hyd	3 x 200,000 lbs Hyd
Flight Deck	205,000 ft²	214,000 ft²
Hangar Deck	3 Bays	2 Bays
Weapons Elevators	Cabled-Electric 9 x 10,500 lbs	Adv Weapons Elev 11 x 24,000 lbs
Horizontal Weapons Movement Distance	~ 1225 ft	390 ft
Messing Area Consumed by Weapons Production (ft²/seats)	~ 12,500 ft² / 650 seats	260 ft² / 32 seats
Reactors	(2) A4W	(2) A1B
Radars	Rotating AN/SPS-48, 49, 67, 73 AN/SPN-43 ATC, AN/SPQ-9B	Phased Array MFR/VSR
Accommodations	5,922	4,660
Galleys	5	2
Messrooms	11 rooms	7 rooms
Air Conditioning Capacity	4,800 tons	9,900 tons
Fresh Water Generation	Distillers	Reverse Osmosis
	400,000 GPD	500,000 GPD
Total Ownership Cost (50 Years)	\$32B (FY 04 \$)	\$27B (FY 04 \$)
Ship Manning	3291	2491
Airwing Manning	2270	1786
Sortie Rate	120/ day sustained; 192 surge	160 /day sustained; 270 surge



Gerald R. Ford Class

Integrated Island

Smaller Island
Re-Positioned
Aft & Outboard

Mast with
Clamp
Antenna

Joint
Precision
Approach and
Landing
System

New Propulsion/Electric Plant

All Electric Aux Services

Zonal Electrical
Distribution System

New
Propulsion
Plants

Improved Weapon & Material Handling

Advanced
Weapons
Elevators

Heavy
Underway
Replenishment

Plasma Arc Waste
Destruction
System

Enhanced Flight Deck

Dual Band
Radar

Enlarged
Flight Deck
Footprint
"Pit Stop"

Advanced
Arresting Gear

Aircraft Elevators (3)
Stbd Sponson
Redesign

Hangar
Bays (2)

#4 Catapult
Unrestricted

Electromagnetic
Aircraft Launching
System (4)

Improved Survivability

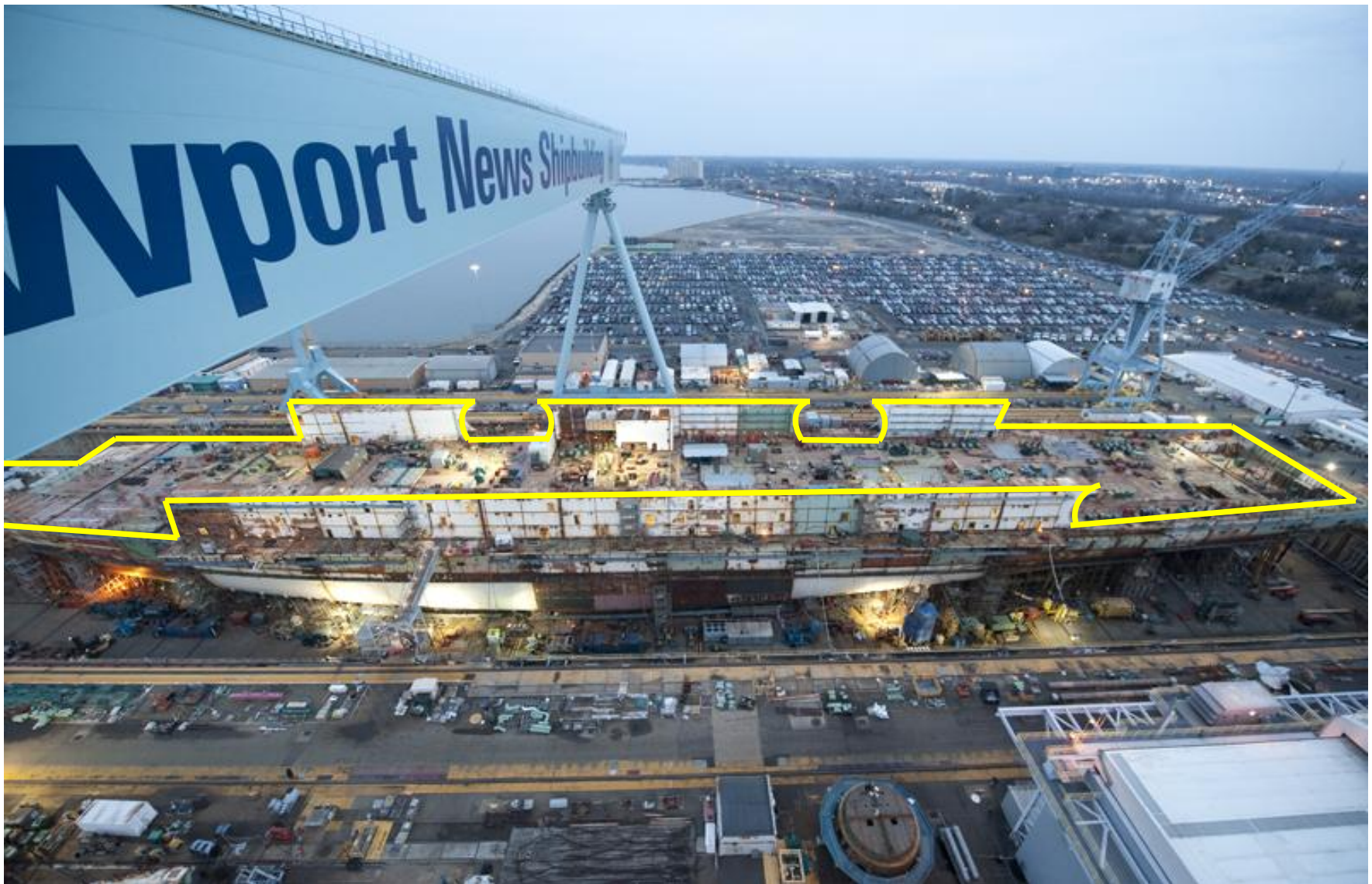
Evolved Sea
Sparrow Missile

Enhanced Ship Self Defense



Gerald R. Ford Class Ship Construction

As of February 2012





CVN Construction History

